



CENTRAL APPALACHIANS AND MID-OHIO VALLEY WEATHER REVIEW

National Weather Service, Charleston, WV www.weather.gov/rlx

Fall/Winter 2009-10

Winter Weather Safety

By: Simone Lewis

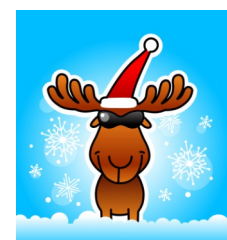
As winter quickly approaches, it is important to take the time to review a few important winter weather safety tips. But first, a brief review of some of the winter products issued by The National Weather Service. A Winter Weather Advisory is issued to advise the public that weather conditions are expected to be hazardous and may cause inconveniences. Generally, these situations are not considered life threatening if caution is used. A Winter Storm Watch is issued 24 to 36 hours before the event, and is often either downgraded to an advisory, or upgraded to a warning as the event nears. A Winter Storm Warning is generally issued within 24 hours of an expected event. In a Winter Storm Warning, precautions should be taken to protect both life and property. Generally, an advisory or warning will specify what the specific weather hazards are (i.e. Winter Storm Warning for heavy snow).

The National Weather Service also issues several other winter weather watches, warnings, and advisories. A Blizzard Watch/Warning is issued when sustained wind speeds or frequent wind gusts of 35 mph or greater with blowing/drifted snow is expected to produce visibilities of 1/4 of a mile or less for at least 3 hours. Wind Chill Watches/Warnings/Advisories are issued to alert the public of significant hazardous low temperatures accentuated by the wind for a period of at least three hours. Finally, an Ice Storm Warning is issued when at least a 1/4 of an inch of ice accumulation is expected, while a Freezing Rain Advisory is issued when less than 1/4 of an inch of ice accumulation is expected, but freezing rain will still cause widespread travel problems.

Safety precautions should be taken before any winter storm strikes your area. Make sure your home has adequate food and water (for you and your pets) in case you should become stranded at your home for several days. Also, it is important to keep a safety kit on hand, including a flashlight and extra batteries (in case loss of power occurs), as well as a first aid kit, and extra medications. It is also a good idea to have an emergency heat source, such as a fireplace, wood stove, or space heater, and adequate fuel to operate such equipment. Generators can also come in handy during power outages lasting several days. Just make sure that any emergency heat sources are properly ventilated, and generators are left outside to avoid carbon monoxide poisoning.

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Extra precautions should also be taken when traveling during winter weather. Travel during hazardous winter weather should only be done if absolutely necessary. Before winter begins, make sure your vehicle is in good condition. Check to make sure your battery and ignition strength are in top condition, and that all engine fluids are properly filled (especially the antifreeze). It's also a good idea to invest in a good set of winter tires to increase traction. Always have at least a half a tank of gas in the vehicle at all times, as well as an emergency kit that includes high energy food and water, extra clothes or blankets, a shovel, sand or road salt, booster cables, and tow chain or rope in case you should become stranded. It's also a good idea to let friends and family members know of your destination and intended route. If you should become stranded, run your car engine for approximately 10 minutes every hour, leaving a crack in the window for ventilation, and making sure your tail pipe is not blocked. If you should become stranded, do not leave your vehicle, and wait for help to come to you. Lastly, drive slowly, and allow sufficient time to reach your destination.

Extreme cold is another aspect of winter weather that can be dangerous or even deadly if proper precautions are not taken. Dress warmly by wearing several layers of loose fitting clothing including mittens/gloves, waterproof boots and coat, and a hat (especially important as most of your body heat is lost through your head). Remove extra layers if you become too warm, as sweating will cool the body, increasing heat loss. Be aware of the signs of frostbite (white or grayish-yellow skin, and skin that feels waxy or firm), and hypothermia (uncontrollable shivering, confusion or loss of coordination, poor decision making, drowsiness, a weak pulse, or shallow breathing), and seek a warm location and immediate medical attention if you suspect either of these conditions.

These are just a few of the many safety precautions that should be considered during the winter months. Additional information on how to protect yourself and your family during the winter can be found at the following web sites:

<http://www.nws.noaa.gov/os/winter/index.shtml> (National Weather Service)

<http://www.bt.cdc.gov/disasters/winter/> (CDC)

<http://www.aap.org/advocacy/releases/decwintertips.cfm> (American Academy of Pediatrics)

http://www.fema.gov/hazard/winter/wi_before.shtml (FEMA)

Bridge Day 2009

By: Mark Pellerito, Meteorologist

On October 17, NWS Charleston provided its annual onsite support for Bridge Day near Fayetteville, WV. Incident Meteorologist (IMET) Mark Pellerito, and IMET Trainee Simone Lewis, maintained a constant weather watch for the duration of the event.

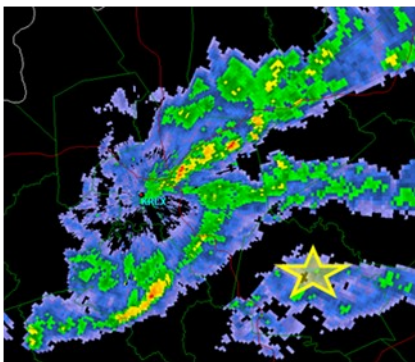
Bridge Day is West Virginia's largest annual event, with attendance that usually exceeds 100,000 people. During the event, hundreds of BASE jumpers leap off the bridge into the New River Gorge; a fall of 876 feet. BASE stands for Building, Antenna, Span, and Earth – the objects BASE jumpers leap from with rapid-deployment parachutes.

The NWS IMET Program began in 1916. Nationwide, there are now 84 certified IMETs and roughly 30 IMET trainees. IMETs provide weather support for incidents anywhere in the United States; whether a wildfire, a hazardous material release, or a multiple-agency response to a natural disaster. At Bridge Day,



NWS IMETs coordinate with other agencies including the National Park Service and the FBI. The IMETs forecast the weather with a special focus on the winds at bridge level and river level. During the event, IMETs use specialized equipment to monitor surrounding weather, and directly measure the wind at various locations.

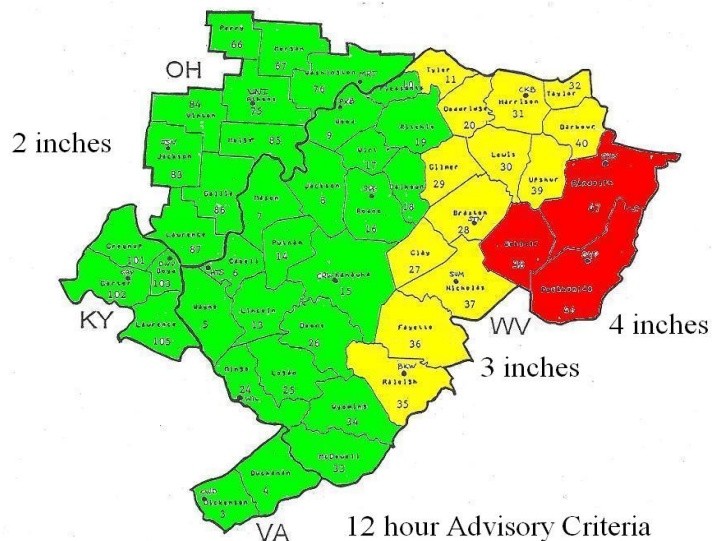
Each year, Bridge Day results in at least a few injuries from BASE jumping, including major traumas. Bridge Day started about 30 years ago, and through the years, there have been 3 fatalities. NWS IMETs provide direct weather support to help emergency responders anticipate hazards for the event. For example, at Bridge Day 2004, the onsite IMET gave 2 to 3 hours of advanced notice for a line of thunderstorms with 40 to 45 mph gusts (Bridge Day located at the star in radar image). This enabled event personnel to take measures to minimize the impact, such as temporarily halting BASE jumps for the duration of the storm.



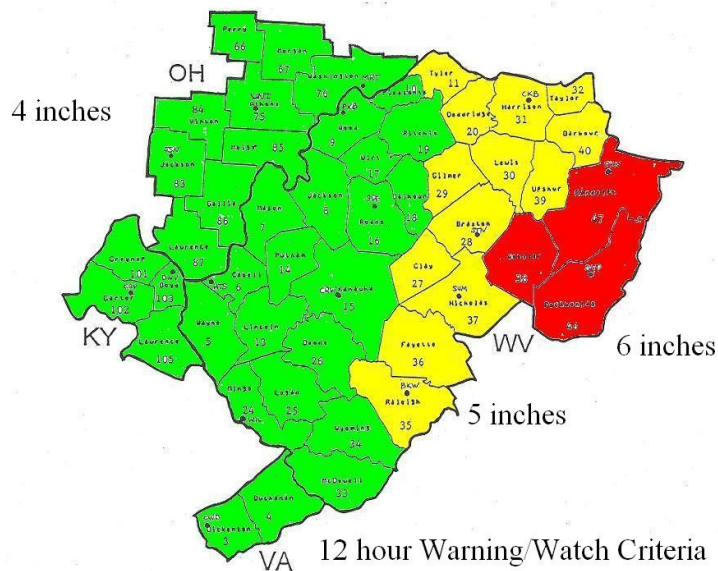
New Winter Weather Warning and Advisory Criteria

By: Nick Webb, Meteorologist

During the past few months the staff at the National Weather Service Forecast Office in Charleston have been conducting a study to re-evaluate our criteria for winter weather advisories and winter storm warnings for snow. This study consisted of a 30, 10, and 5 year climatology of 24 hour snowfall during the winter months using COOP stations. Seasonal average snowfall was calculated for each COOP station for the aforementioned time periods. Average frequency of snowfall amounts from one to six inches were also determined. Based on the results of our research and after coordination with surrounding National Weather Service Offices some changes were made to our advisory/warning criteria. These changes will be effective November 15, 2009. The following color shaded maps show the new criteria.



Each of the maps to the left depict the amount of snowfall needed in a designated time period (12 or 24 hours, and at least 50% of the county covered) to warrant either a Winter Weather Advisory or a Winter Storm Warning for snow.

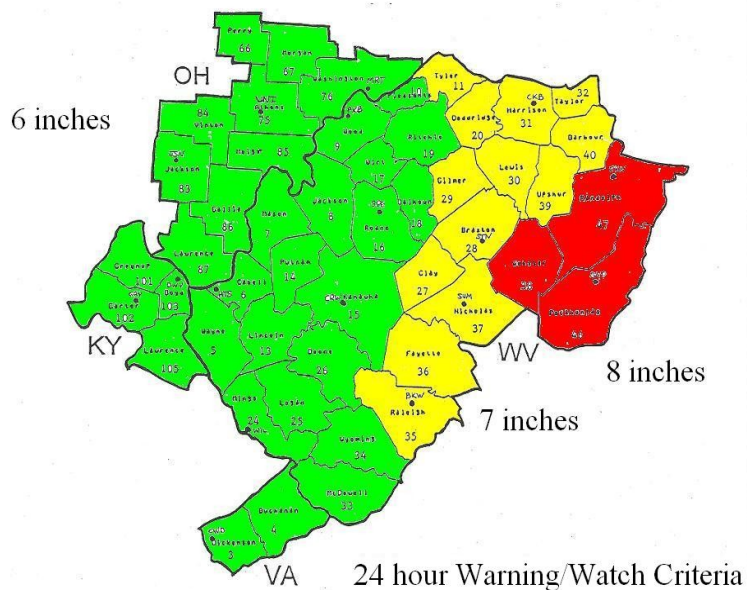


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Making Proper Snowfall Measurements

By: Andrew Beavers, Hydrometeorological Technician

As winter approaches, this is a good time to review snow measurement procedures. The following steps are used to assist the Charleston weather office with snowfall amounts. We will discuss the difference between snowfall and snow depth, and how to report these measurements.

Snowfall is the maximum accumulation of fresh snow on the ground prior to melting or settling. We measure snowfall to the nearest 0.1 (one tenth) inch, being careful to note that some rulers do not measure to the nearest tenth. Since snow melts and/or settles, you may have to measure soon after the snowfall ends. For example, sometimes snow falls to 3 inches, then melts or settles down to 2.5 inches.

The trick to measuring snow consistently is simply finding a good place to measure, and a hard surface such as a snowboard (we will discuss snowboards later) for your ruler to set on. Some examples of good places to measure are picnic tables, hand railings to decks, or vehicles. It is ok to measure on grass, but please know that the snow tends to sit up on top of the blades of grass by as much as 1 to 3 inches. Your ruler, on the other hand, will go right down through the grass to the ground and give an exaggerated reading. Just be careful to measure to the bottom of the snow...not to the ground.

An added dimension to measuring snowfall is when wind is present during the snow storm. Wind creates drifts and valleys in the snow and you might have to take measurements from different locations in order to get an average. It is best to have a usual measuring location that is out of the wind where the snow can fall without the effects of the wind.

A snowboard is usually just a piece of plywood about 2 feet by 2 feet square and painted white. A snowboard can be placed anywhere (i.e. out of the wind, or along a walkway) and makes measuring snow with a ruler more accurate.

Once you have your ruler and a good spot to measure the snow, it is fairly simple to take the actual measurement. Simply insert the ruler in to the snow, perpendicular to the ground, and read how far up the ruler the snow is. Once the measurement is made, the snowboard (or other surface used for measuring) is swept free from snow and readied for the next snow storm. For example, you take a measurement at 12 noon and record 2 inches, and then sweep the measuring surface clear. At 3 pm it begins to snow again until 6 pm when you take another measurement of 3 inches. The new snowfall from noon to 6 pm is 3 inches, where the snow depth might be 5 inches.

Measuring snow depth is simple. It is the total amount of snow on the ground, but it is only measured to the nearest inch (not the nearest tenth of an inch). It is done the same as snowfall, except you do not sweep the measuring surface clear of snow. For example, if it snows 2 inches from 10 am to noon, then another 1 inch from 2 pm to 4 pm, then another 3 inches from 6 pm to 9 pm the snow depth will be around 6 inches. The only matter you have to take into account is how much the snow may melt or settle. If it snows 5 inches in the morning, then warms up the snow depth the next morning may only be 3 inches due to melting.